DOCUMENT RESUME

ED 233 061 TM 830 509

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TITLE The Myers-Briggs Type Indicator: Analysis of Discrepancy Score Phenomenon in a Real World Sample.
PUB DATE 15 Apr 83
NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (67th, Montreal, Quebec, April 11-15, 1983).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adults; *Personality Measures; Personality Traits; Sampling; Scores; *Testing Problems; Test Interpretation; *Test Reliability; *Test Validity
IDENTIFIERS *Discrepancy Analysis; Internal Consistency; *Myers Briggs Type Indicator

ABSTRACT

The purpose of this paper is to examine the nature of discrepancy score phenomena of the Myers-Briggs Type Indicator (MBTI), as related to internal consistency and construct validity of the instrument. Data were collected from 140 university research managers. The data suggest internal consistency problems: only 37.3 percent of the subjects produced internally consistent scores. From the examination of the discrepancy scores in this real world sample, a judgment is offered about interpretation and use of MBTI data containing discrepant scores in light of the Jungian theory undergirding the MBTI. (PN)

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The Myers-Briggs Type Indicator: Analysis of discrepancy score phenomenon in a real world sample

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Paper presented at American Educational Research Association meeting, April 15, 1983, Montreal, Canada

Tm 830 502

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The purpose of this paper is to examine the nature of discrepancy score phenomena of the Myers-Briggs Type Indicator (MBTI) as related to internal consistency and construct validity of the instrument. From the examination of the discrepancy scores in a real world sample, a judgment will be offered about interpretation and use of MBTI data containing discrepant scores in light of the Jungian theory undergirding the MBTI.

Overview of the Problem

The MBTI produces a preference scores for each of the four aspects of personality it attempts to measure. The net result is an overall score which is intended to reflect the preference an individual shows for one of sixteen personality types as defined by the interpretation of Jung's (1921/1971) theory of psychological type by the originators of the instrument (McCaulley, 1977). The overall type reported on the MBTI is determined by scores on two sub-tests of the instrument--a word-pair section and a word-phrase section.

If we consider the overall type profile in light of the profiles of type established by scores on the individual sub-tests, then it is possible and, I think, desirable to seek illumination of the meaning of discrepant scores. It is important at this point to distinguish between measures of internal consistency given in the form of split-half reliabilities (MBTI, 1962; 1967; Myers, 1962) and those given in the form of discrepancy scores.

Myers (1962) reports that split-half reliabilities are determined by splitting each index (E-I; S-N; T-F; J-P) in half and pursuing Gilford's (1954) recommendations for a logically-split-half procedure. However, because the splitting is across sub-tests, the procedure does not allow comparison of sub-test scores as indication of internal consistency.

The MBTI manual (Myers, 1962) notes appropriately that there is a problem in ascertaining the reliability of the MBTI due to the nature of the construct(s) the instrument is attempting to measure vis a vis the nature of the individual being assessed.

> More than with most other tests, perhaps, the experimenter is faced with the question of how much of any given result is the reliability of the indicator and how much is the reliability of the person taking it. The potent but as yet unmeasureable variable of "type development"... enters every equation as an unknown quantity. Also unknown is the mean level of type development for any of the various samples that are tested, and how many individuals in each should be expected to be answering virtually at random because their type is insufficiently developed to govern their responses (p. 19).

This comparison of instrument reliability to subject reliability, although seemingly inane at first glance, does reflect the possibility of the subject's developmental condition belying the overall reliability of the instrument. Ironically, the very construct which MBTI attempts to measure, psychological type, can serve to blur the actual internal consistency in terms of statistical reliability when the psychological type of the subject is developmentally undifferentiated. But that is a point for discussion later. Therefore, the caveat in the manual (Myers, 1962) dealing with use of statistical measures of reliability should be noted explicitly.

> (i)t seems more realistic not to attempt to derive "the" reliability of the Indicator from item statistics (p. 19)

In spite of the aforementioned caveat to statistical reliability, split-half reliabilities are reported in the manual and appear credible (.75 or higher) for the instrument when level of development (age data) is considered. In this sense, the MBTI can and probably should be considered to have adequate statistical, split-half reliability. However, in clinical or counseling settings where N = 1, a measure of internal consistency may be of considerable importance to the clinician or counselor such that ordinary statistical measures of reliability are insufficient for the confidence level necessary for interpretation and prescription. However, an interesting view of internal consistency is afforded through the report of discrepancy scores.

Discrepancy scores are obtained by comparing the score for each index (E-I; N-S; T-F; J-P) as determined from the word-pair and word-phrase subtests. This is done by calculating a preference score for each index on both subtests and noting zero as discrepancy score if the letter part is the same on both subtests for a given index. If the letter part is not identical on both subtests for a given index, the preference scores are added together and noted (McCaulley & Myers, 1977). While the specific discrepancy score seems to have little meaning beyond being the sum of two separate preference scores, the notion that a given individual is characterized as being of one psychological type on one subtest and a different psychological type on the other suggests value in examining the phenomenon in light theoretical constructs upon which MBTI is based. It should also be noted that it is in fact possible for an individual to score as three

different psychological types when consideration is given to the possiblity of both subtest scores and overall score differing.

Method

Kadunc (1982) sought to examine two questions regarding validation of a conceptual model dealing with characteristics of research and development organizations and characteristics of project managers. The first question examined the nature of the relationship between project and organizational characteristics preferred by project managers and their psychological types. The second examined the relationship between managers as decision makers and psychological type. Data were collected from 140 research managers affiliated with university educational research and non-profit educational regional labs. A total of 276 subjects were asked to participate, of which 140 returned usable data. The MBTI was used as the measure of psychological type and was scored for discrepancy among overall type, word-pair type, and word-phrase type.

The data from MBTI were examined to allow breakdown of overall score, word-pair score, and word-phrase score; frequency of discrepancy; overall type on pair; overall type on phrase; and discrepancy score preference strength. The Kadunc study collected and examined data dealing with discrepancy scores in order to gain insight about the frequency and comparative nature of discrepancy score phenomenon in conjunction with this writer, not as any direct function of testing her hypotheses.

The direction for such examination comes from three places. First is this writers interest and work in the application of Jung's work to education. Second is this writers role as a consultant to Kadunc in

terms of the Jungian dimensions of her study. Third is genuine concern about the construct validity and internal consistency of the MBTI relative to the subtest and overall scores. The segue into examination of the nature of the discrepancy score phenomenon from these initial positions is provided in the MBTI scoring breakdown sheet (McCaulley & Myers, 1977) when it is noted that discrepancy scoring gives an estimate of internal consistency.

The data presented in table-1 show frequency breakdowns among those subjects in the sample who had: a) no discrepancy score, b) discrepancy between word-pair and overall, c) discrepancy between word-phrase and overall and, d) discrepancy among overall, word-pair, and word-phrase.

Insert table-1 about here

When the issue of internal consistency of the MBTI is addressed in terms of frequency of discrepancy scores, the data from this sample suggest that there may be problems with internal consistency. Table-1 indicates that only 37.3% of the subjects in the sample had overall scores which were consistent with both word-pair and word-phrase subtest scores. While 52.9% had an overall score which was consistent with either the word-pair or word-phrase score, slightly less than 10% of the subjects failed to show any consistency--word-pair, word-phrase, and overall type were different.

As a measure of location of discrepancy scores, table-2, frequency of discrepancy as a function of the four measures of personality type tells us that discrepancy scores in this sample accrue in relative proportions as a function of the particular personality dimension being

measured. That is to say that discrepancy scores on the E-I dimension occured in 30% of the sample cases and three times more often than S-N discrepancies. Likewise, discrepancy scores on either T-F or J-P occurred in 20% of the cases and twice as often as S-N discrepancies.

Insert table-2 about here

Since the initial problem is centered in the need to understand better the internal consistency of the MBTI vis a vis discrepancy score phenomenon in order to explore construct validity of the MBTI, the results of this most rudimentary analysis of the data need illumination from the undergirding theory of C.G. Jung. This should not belie the need for further data analysis regarding discrepancy scores, however, data analysis can be meaningless without appropriate theoretical framework. Hence a re-examination of Jungian theory is appropriate in order to continue empirical analysis of discrepancy score phenomenon.

Discussion

The first and most appropriate step in exploring the meaning of data which indicate that only 37.3% of the subjects produced scores which were internally consistent, is to refer back to the claim in the MBTI manual that type development may mediate reliability of responses. The assumption of type development is based soundly within Jung's theory. The essence of type development exists in Jung's (1913/1971; 1921/1971; 1923/1971; 1931/1971; 1936/1971) theory of psychological types and has been explicated in Gifts differing (Myers, 1980) which addresses psychological type in terms of the MBTI.

The notion of type development is tied to the idea that the formation of personality is a direct function of the degree to which the four functions are capable of conscious, directed operation by that individual. This conscious, directed use of the functions is a product of their differentiation (Jung, 1921). Further, unless the functions are relatively differentiated, direction is precluded. On the subject of differentiation Jung (1921/1971) comments:

> To the extent that a function is largely or wholly unconscious, it is also undifferentiated; it is not only fused together in its parts but also merged with other functions. Differentiation consists in the separation of its individual parts from each other. Without differentiation direction is impossible, since the direction of a function towards a goal depends on the elimination of anything irrelevant. Fusion with the irrelevant precludes direction; only a differentiated function is capable of being directed. (p. 424-5).

Differentiation of psychological functions is subsumed under, and a necessary condition for individuation (Jung, 1921/1971; 1939/1959; 1934/1950/1959). Individuation is explicitly a developmental phenomenon. Relating to both differentiation and subsequent formation of personality, Jung (1921/1979) describes this developmental construct in the following terms:

> In general, it is the process by which individual beings are formed and differentiated; in particular, it is the development of the psychological <u>individual</u> as being distinct from the general, collective psychology.

> Individuation, therefore, is a process of differentiation having for its goal the development of the individual personality. (p. 448).

Restating the type development hypothesis as a possible explanation for frequency of discrepancy scores we would say: If subjects of a given sample have failed to achieve differentiation among their functions, then their scores would be discrepant. There are three rudimentary, descriptive statistics which can serve as high inference indicators for exploring the development hypothesis: respondent age, educational attainment, and split-half reliability trends across age and educational attainment.

By comparing subject age and education with split-half reliability trends we actually view internal consistency as a function of subject reliability (Myers, 1962). More specifically, we seek to find out whether or not subject reliability is possibly related to variables of age and education. The data presented in the MBTI suggest that split-half reliability coefficients do increase as age and intellectual ability of subjects increase. On the theoretical side, Jung (1928/1953; 1934/1954) would support the notion that age and education serve to facilitate differentiation and therefore, type development.

The data in this sample suggest that the development hypothesis is without merit at high inference level. The mean age of the sample is 43.06 years with a range of 26-66 and standard deviation of 8.52 (females $\bar{X}$ = 40.95 range = 26-66, S.D. = 8.70, males $\bar{X}$ = 44.05, range = 36-64, S.D. = 8.31). These descriptive data are hardly suggestive of poorly developed type when consideration is given to split-half reliabilities in the MBTI manual which are .75 or higher for populations

ranging from Jr. high students through college undergraduates. Likewise, the level of educational attainment of the sample used in this study is predominantly Ph.D. or higher as indicated in table-3.

Insert table-3 about here

Jung's theory of psychological types is the undergirding construct for the MBTI (Myers, 1962; 1980). The instrument is clearly an attempt to measure Jung's construct, hence it is not surprising that the manual relates reliability problems to the notion of type development. Although the manual does not deal with the issue of discrepancy scores, the scoring breakdown report sheet for the MBTI notes:

> Some counselors report that persons with large discrepancy scores experience tension in the expression of the preference with the discrepancy. One possibility is that the person tries to appear to others like the phrase-question preference, but wishes to hold the word-pair preference. (McCaulley & Myers, 1977).

This statement seems to imply that the word-phrase subtest is more amenable to manipulation by the respondent. If this is the case, then we need to examine the nature of the two subtests in light of the data and Jungian theory. Our data (table-1) indicate that the frequency of discrepancy scores was less between overall and word-phrase than between overall and word-pair, i.e., phrase scores were more often congruent with overall score than were word-pair scores. In addition, there seems to be tacit support for the idea that if individuals want to manipulate the MBTI outcome in the direction of the way they wish to appear, it is

easier to "see through" the sentences of the word-phrase section than the isolated word of the word-pair section.

The data surely indicate that the discrepancy phenomenon is real for this sample. Likewise there is some suggestion which hints at support for the somewhat cryptic comments from counselors about people trying to manipulate their appearance through the word-phrase subtest. In addition, there is a Jungian construct related to psychological type, but distinct in its own form, which may serve to build a hypothetical explanation for discrepancy score phenomenon.

Jung's construct of Persona (1928/1953; 1940/1950/1959) provides an interesting fit to the problem. Jung compares the persona to its original meaning when it was a mask worn by actors to indicate the role being played. Jung writes:

> Fundamentally the persona is nothing real; it is a compromise between individual and society as to what a man should appear to be. He takes a name, earns a title, represents an office, he is this or that. In a certain sense all this is real, yet in relation to the essential individuality of the person concerned it is only a secondary reality, a product of compromise, in making which others often have a greater share than he. The persona is a semblance, a two-dimensional reality to give it a nickname. (p. 155-6).

Persona in this sense becomes the living definition of how we wish to be seen--a rather unconscious self-presentation that is a function of our occupation, role, and expectations of significant others. The emerging hypothesis for discrepancy score phenomenon suggests a relationship

between the choice of response on the MBTI and the way and individual prefers to be pictured rather than psychological type preference. Dieter Wyss (1961/1973) describes the essence of Jung's 'persona' when he writes:

> The persona concept is not only supposed to define the character of the individual, it is also supposed to embrace his function in the community as well.... A doctor, for example, is said to have a typical 'persona', i.e. his particular professional manner, the same as a parson or counter clerk. Jung's observation that this manner is determined to a considerable degree by the expectations of the community--which would, for example, expect a parson to behave with dignity and decorum--is a true one. (p. 330).

Consider now that this sample represents project managers who were asked to participate in a research study (Kadunc, 1982) intended to examine hypotheses relating to managerial style, decision making characteristics, and psychological type. Further, subjects were asked to fill out a questionnaire dealing with their work role in addition to completing the MBTI. Taking Jung's construct of persona as a theoretical perspective, an alternative hypothesis regarding discrepancy scores emerges: If subjects of a given sample have strong personas which mask and are incongruent with their psychological type, then their MBTI scores will be discrepant.

The essence of this hypothesis, from the standpoint of Jungian theory, is that persona can be seen as having its own "type" characteristics which when incongruent with innate psychological type

may serve to mask the actual predisposition of the respondent. Again, when consideration is given to the nature of the sample used in this study in particular or to use of MBTI in association with career and occupation in general, Jung's (1940/1950/1959) comments about persona and profession seem salient:

> Every calling or profession, for example has its own characteristic persona.... One could say, with a little exaggeration, that the persona is that which in reality one is not, but which oneself as well as others think one is. In any case the temptation to be what one seems to be is great, because the persona is usually rewarded in cash. (p. 123).

It is important to note that while the data do not support the persona notion with any great degree of confidence, there is some suggestion that this alternative to the development hypothesis may be tenable enough such that analysis for lower inference confidence may be warranted.

Hypotheses aside, the data clearly indicate one very important issue and raise another. The most important issue from the data is the need to score MBTI for discrepancies. Regardless of the uncertainty about the nature of discrepancy scores, they do exist in this sample and must be seen as problematic. Ramifications for any counseling be it career, psychological, or other are serious when decisions are made based wholly or in part on the MBTI overall score. These data suggest that a judgment that overall score is accurate when discrepancy scores are unknown is not merited. These data also suggest that MBTI publish discrepancy score data along with split-half reliabilities. If no other

item of interest emerges from this study, let the discrepancy score phenomenon serve as a firm caveat to those using the MBTI in N = 1 situations.

Explicit in the persona explanation for discrepancy scores is the notion that persona effect may be a mediating variable in the assessment of psychological type. Implicit in the persona hypothesis is the issue of construct validity. While split-half reliabilities given in the MBTI manual seem to indicate a reasonable level of internal consistency, the discrepancy scores in this sample seem to indicate an unreasonable level of internal consistency. If the person hypothesis is found to be significant, it could mean that either the instrument is "transparent" or that there is a problem with the construct being measured. From the standpoint of Jungian theory we must question the degree to which persona manifests its "type characteristics" on an instrument such as the MBTI. If persona effects are strong enough, it is entirely possible, theoretically, that the MBTI overall score is representative of psychological type only when persona "type" is congruent with actual psychological type. Thus, these data with a little push from the theory of C.G. Jung may serve to raise serious issues as to construct validity vis a vis psychological type, persona type, or interaction between both constructs.

Table-1

Frequency and percentage for combinations

of overall test and subtest scores

Combination	Frequency	Percentage
Overall, pair, and phrase the same	50	37.3
Overall and pair the same	29	21.6
Overall and phrase the same	42	31.3
All different	13	09.7
Total	134	99.9

Table-2

Percentage of non-discrepant and discrepant scores

by the four psychological type dimensions

Dimension	Non-discrepant	Discrepant
Extraversion-Introversion	69.9	30.1
Sensing-Intuition	89.7	10.3
Thinking-feeling	78.7	21.3
Judging-perceiving	78.7	21.3

N = 136

Table-3

Frequency and percentage of sample data

by educational attainment levels

Educational level	Male	Female	Total	% Total
Bachelor's	0	2	2	01.4
Master's	2	2	4	02.9
Master's +	8	8	16	11.4
Ph.D.	76	29	105	75.0
Ph.D. +	9	4	13	09.3
Total	95	45	140	100.0

References

Gilford, J.P. Psychometric methods. (2nd ed.) New York: McGraw-Hill, 1954.

Jung, C.G. A contribution to the study of psychological types. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 6. Princeton: Princeton Univ. Press, 1971. (Originally published, 1913.)

Jung, C.G. Psychological types. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 6. Princeton: Princeton Univ. Press, 1971. (Originally published, 1921.)

Jung, C.G. Psychological types. (R.F.C. Hull, Trans.) Bollingen Series XX Vol. 6. Princeton: Princeton Univ. Press, 1971. (Originally published, 1923.)

Jung, C.G. Relations between the ego and unconscious. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 7. Princeton: Princeton Univ. Press, 1953. (Originally published, 1928)

Jung, C.G. A psychological theory of types. (R.F.C. Hull, Trans.) Bollingen series XX, Vol. 6. Princeton: Princeton Univ. Press, 1971. (Originally published, 1931.)

Jung, C.G. The development of personality. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 17. Princeton: Princeton Univ. Press, 1954. (Originally published, 1934.)

Jung, C.G. A study in the process of individuation. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 9, Pt. 1. Princeton: Princeton Univ. Press, 1959. (Originally published, 1934/1950.)

Jung, C.G. Psychological typology. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 6. Princeton: Princeton Univ. Press, 1971. (Originally published, 1936)

Jung, C.G. Conscious, unconscious, and individuation. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 9, Pt. 1. Princeton: Princeton Univ. Press, 1959. (Originally published, 1939.)

Jung, C.G. Concerning rebirth. (R.F.C. Hull, Trans.) Bollingen Series XX, Vol. 9, Pt. 1. Princeton: Princeton Univ. Press, 1959. (Originally published, 1940/1950.)

Kadunc, N.J. Jungian psychological types of educational research and development project managers and their preferences for project and organizational characteristics. Unpublished Doctoral Dissertation, The Ohio State University, 1982.

McCaulley, M. Introduction to the MBTI for researchers. Washington: HEW, 1977.

McCaulley, M. and Myers, I. Scoring breakdown sheet for MBTI. Gainesville: CAPT, 1977.

Myers, I.B. Manual for MBTI. Palo Alto: Consulting Psychologists Press, 1962.

Myers, I.B. Gifts differing. Palo Alto: Consulting Psychologists Press, 1980.

Wyss, Dieter. Psychoanalytic schools from beginning to the present. (G. Onn, Trans.) New York: Jason Aronson, 1973. (Originally published, 1961.)